

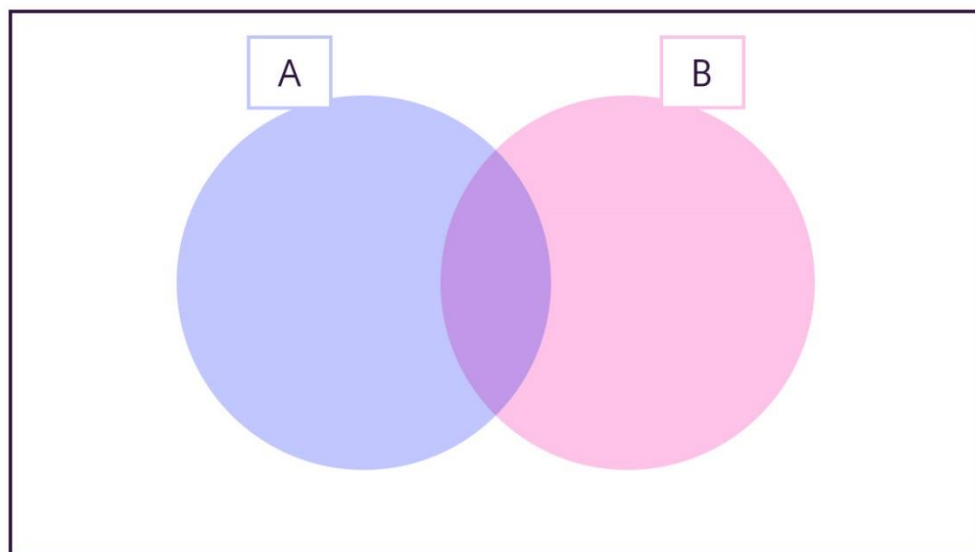
Bitesize Daily Year 9/S3 lessons**17 June - Venn diagrams: understand and use set notation for the intersection and union****Practise - Activity 1: Quiz**

Before you begin, look at the following information:

Hints and tips to help you

- **Curly brackets** show a set of values.
- Given values are a '**member**' of or an '**element**' of a set.
- ϵ means '**the universal set**' which is made up of all the elements involved in the question.
- $A \cup B$ means '**A union B**' and is made up of all the elements that are in set A or set B, or both.
- $A \cap B$ means '**A intersection B**' and is made up of all the elements that are in set A and in set B.
- A' means '**complement of A**' and is all the elements that are **not** in set A.

Use this Venn diagram and the descriptions that follow to help you answer questions 1-10.



For each question, write down the solution (a-d) each time that correctly shows the named set, eg A' .

Use this information when answering questions 1–5:

A = {Even numbers}

B = {Prime numbers}

ϵ = {1, 2, 3...20}

1. A'

- a) {1, 3, 5, 7, 9, 11, 13, 15, 17, 19}
- b) {Integers >20}
- c) {1, 3, 5, 7, 11, 13, 17, 19}
- d) {2, 4, 6, 8, 10, 12, 14, 16, 18, 20}

2. B

- a) {2, 4, 6, 8, 10, 12, 14, 16, 18, 20}
- b) {2, 3, 5, 7, 11, 13, 17, 19}
- c) {1, 3, 5, 7, 11, 13, 17, 19}
- d) {1, 2, 3, 5, 7, 11, 13, 17, 19}

3. A $\cup$ B

- a) {1, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20}
- b) {2, 4, 6, 8, 10, 12, 14, 16, 18, 20}
- c) {2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20}
- d) {2}

4. A $\cap$ B

- a) {2}
- b) {2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20}
- c) {2, 4, 6, 8, 10, 12, 14, 16, 18, 20}
- d) {9, 15}

5. The universal set

- a) $\{1, 2, 3 \dots 20\}$
- b) $\{2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20\}$
- c) $\{9, 15\}$
- d) $\{2\}$

Now use this information when answering questions 6–10:

$$\epsilon = \{1, 2, 3, 4 \dots 10\}$$

$$A = \{2, 3, 5, 9\}$$

$$B = \{2, 4, 5, 10\}$$

6. A'

- a) $\{2, 4, 5, 10\}$
- b) $\{1, 6, 7, 8\}$
- c) $\{2, 5\}$
- d) $\{1, 4, 6, 7, 8, 10\}$

7. B'

- a) $\{2, 3, 5, 9\}$
- b) $\{2, 5\}$
- c) $\{1, 6, 7, 8\}$
- d) $\{1, 3, 6, 7, 8, 9\}$

8. $A \cup B$

- a) $\{2, 3, 4, 5, 9, 10\}$
- b) $\{2, 3, 4, 5, 10\}$
- c) $\{2, 5\}$
- d) $\{1, 6, 7, 8\}$

9. $A \cap B$

- a) {1, 6, 7, 8}
- b) {1, 3, 6, 7, 8, 9}
- c) {2, 5}
- d) {2, 3, 4, 5, 9, 10}

10. $A' \cap B$

- a) {2, 5}
- b) {4, 10}
- c) {2, 3, 4, 5, 9, 10}
- d) {1, 6, 7, 8}